AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

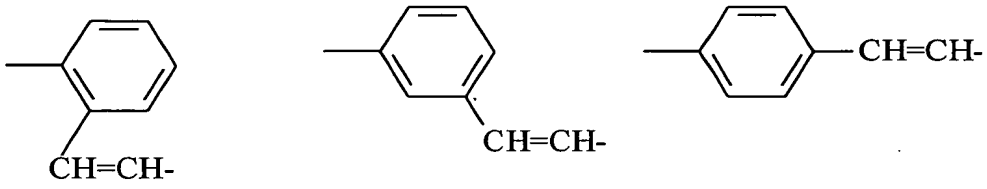
LISTING OF CLAIMS:

Claim 1 (Cancelled)

Claim 2 (Previously Presented) The method according to claim 38 wherein R_1 and R_2 are a hydrogen atom, a methyl group, or a methoxy group.

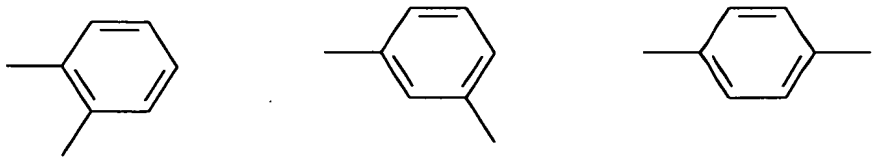
Claim 3 (Previously Presented) The method according to claim 38 wherein R_3 is a hydrogen atom or a methyl group.

Claim 4 (Previously Presented) The method according to claim 38 wherein Z is



and n is an integer 0.

Claim 5 (Previously Presented) The method according to claim 38 wherein Z is



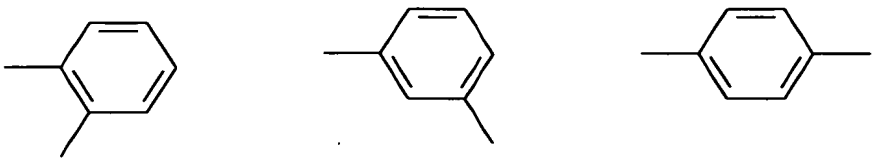
and n is an integer 1, 2, or 3.

Claim 6 (Previously Presented) The method according to claim 38 wherein R_4 is a group $-COOR_5$ wherein R_5 is a hydrogen atom, an optionally substituted alkyl group having 1 to 8 carbons, an optionally substituted phenyl group, or an optionally substituted aralkyl group having 7 to 11 carbons.

Claim 7 (Previously Presented) The method according to claim 38 wherein R_4 is a group $-CONR_6R_7$ wherein R_6 and R_7 are each independently a hydrogen atom, an optionally substituted alkyl group having 1 to 8 carbons, an optionally substituted bicyclic unsaturated or partially saturated hydrocarbon ring group having 9 to 11 carbons, an optionally substituted heterocyclic group, an optionally substituted phenyl group, an optionally substituted aralkyl group having 7 to 11 carbons, or a heteroaryl-C_1-C_3-alkyl group, or R_6 and R_7, together with the nitrogen atom to which they are attached, represent a heterocyclic group which may further contain a nitrogen, oxygen, and/or sulfur atom.

Claim 8 (Previously Presented) The method according to claim 38 wherein R_4 is a group $-CONR_6R_7$ wherein R_6 and R_7, together with the nitrogen atom to which they are attached, represent a 5- to 10-membered optionally substituted, nitrogen-containing heterocyclic group which may contain, in addition to the carbon and nitrogen atom, 1 to 3 heteroatoms selected from the group consisting of a nitrogen, oxygen and sulfur atom, the carbon atom on said cyclic group being optionally a ketone form or the sulfur atom on said cyclic group being optionally an oxide form.

Claim 9 (Previously Presented) The method according to claim 38 wherein R_1 and R_2 are a methyl group or a methoxy group; R_3 is a methyl group: R_4 is a carboxyl group which is optionally esterified or amidated; Z is



and n is an integer 1, 2, or 3.

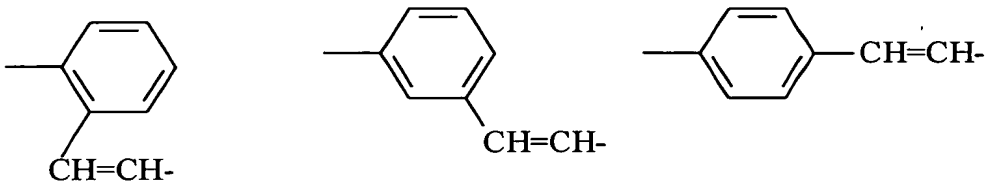
Claim 10 (Previously Presented) The method according to claim 38 wherein the benzoquinone derivative suppresses gene expression of one or more substances is selected from the group consisting of IL-1, TNF-α, IL-2, IL-6, IL-8, iNOS, granulocyte colony-stimulating factor, inteferon-β, ICAM-1, VCAM-1, ELAM-1, major histocompatibility system class I, major histocompatibility system class II, β2-microglobulin, immunoglobulin light chain, serum amyloid A, angiotensinogen, complement B, complement C4, c-myc, HIV, HTLV-1, SV40, CMV, and adenovirus.

Claims 11-16 (Cancelled)

Claim 17 (Previously Presented) The method according to claim 40 wherein R_1 and R_2 are a hydrogen atom, a methyl group, or a methoxy group.

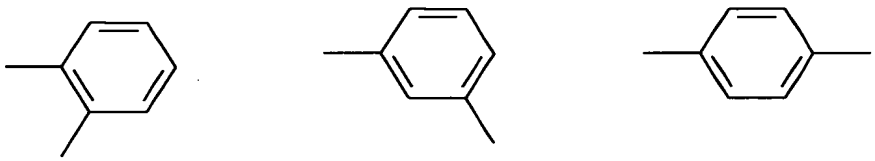
Claim 18 (Previously Presented) The method according to claim 40 wherein R_3 is a hydrogen atom or a methyl group.

Claim 19 (Previously Presented) The method according to claim 40 wherein Z is



and n is an integer 0.

Claim 20 (Previously Presented) The method according to claim 40 wherein Z is



and n is an integer 1, 2, or 3.

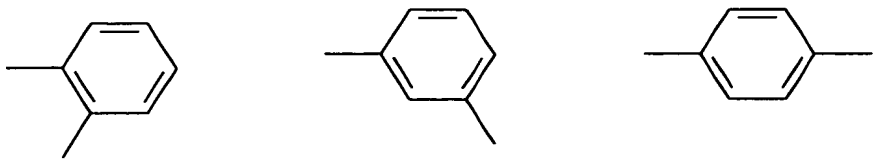
Claim 21 (Previously Presented) The method according to claim 40 wherein R_4 is a group $-COOR_5$ wherein R_5 is a hydrogen atom, an optionally substituted alkyl group having 1 to 8 carbons, an optionally substituted phenyl group, or an optionally substituted aralkyl group having 7 to 11 carbons.

Claim 22 (Previously Presented) The method according to claim 40 wherein R_4 is a group $-CONR_6R_7$ wherein R_6 and R_7 are each independently a hydrogen atom, an optionally substituted alkyl group having 1 to 8 carbons, an optionally substituted bicyclic unsaturated

or partially saturated hydrocarbon ring group having 9 to 11 carbons, an optionally substituted heterocyclic group, an optionally substituted phenyl group, an optionally substituted aralkyl group having 7 to 11 carbons, or a heteroaryl-C_1-C_3-alkyl group, or R_6 and R_7, together with the nitrogen atom to which they are attached, represent a heterocyclic group which may further contain a nitrogen, oxygen, and/or sulfur atom.

Claim 23 (Previously Presented) The method according to claim 40 wherein R_4 is a group -$CONR_6R_7$ wherein R_6 and R_7, together with the nitrogen atom to which they are attached, represent a 5- to 10-membered optionally substituted, nitrogen-containing heterocyclic group which may contain, in addition to the carbon and nitrogen atom, 1 to 3 heteroatoms selected from the group consisting of a nitrogen, oxygen and sulfur atom, the carbon atom on said cyclic group being optionally a ketone form or the sulfur atom on said cyclic group being optionally an oxide form.

Claim 24 (Previously Presented) The method according to claim 40 wherein R_1 and R_2 are a methyl group or a methoxy group; R_3 is a methyl group: R_4 is a carboxyl group which is optionally esterified or amidated; Z is

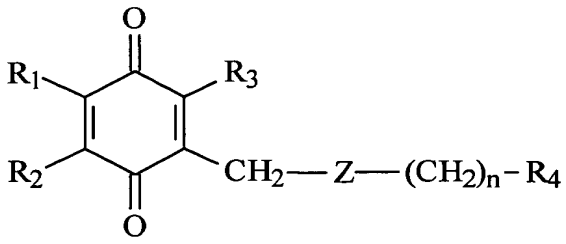


and n is an integer 1, 2, or 3.

Claim 25 (Previously Presented) The method according to claim 40 wherein the benzoquinone derivative suppresses gene expression of one or more substances is selected from the group consisting of IL-1 TNF-α, IL-2, IL-6, IL-8, iNOS, granulocyte colony-stimulating factor, inteferon-β, ICAM-1, VCAM-1, ELAM-1, plasminogen activator-inhibiting factor I, major histocompatibility system class I, major histocompatibility system class II, β2-microglobulin, immunoglobulin light chain, serum amyloid A, angiotensinogen, complement B, complement C4, c-myc, HIV, HTLV-1, SV40, CMV, and adenovirus.

Claims 26-37 (Cancelled)

Claim 38 (Previously Presented) A method for inhibiting NF-κB comprising administering to a patient in need of NF-κB inhibition a benzoquinone derivative represented by the following general formula (1):

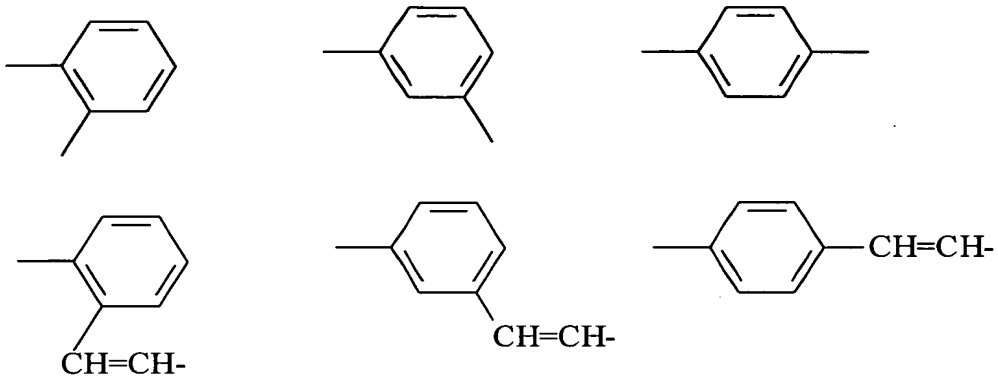


wherein

R_1, R_2 and R_3 are each independently a hydrogen atom, an alkyl group having 1 to 5 carbons, or an alkoxy group having 1 to 5 carbons;

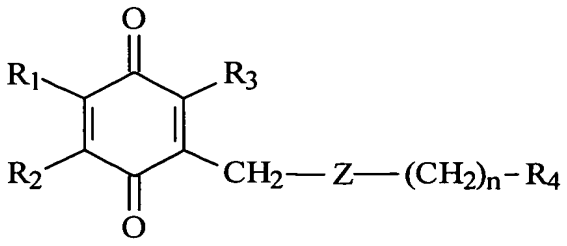
R_4 is a hydrogen atom, a hydroxymethyl group, an alkyl group, or a carboxyl group which is optionally esterified or amidated;

Z is



and, n is an integer from 0 to 6, or its hydroquinone form, or a pharmaceutically acceptable salt thereof.

Claim 39 (Previously Presented) A method for preventing or treating diseases caused by the activation of NF-κB comprising administering to a patient a benzoquinone derivative represented by the following general formula (1):

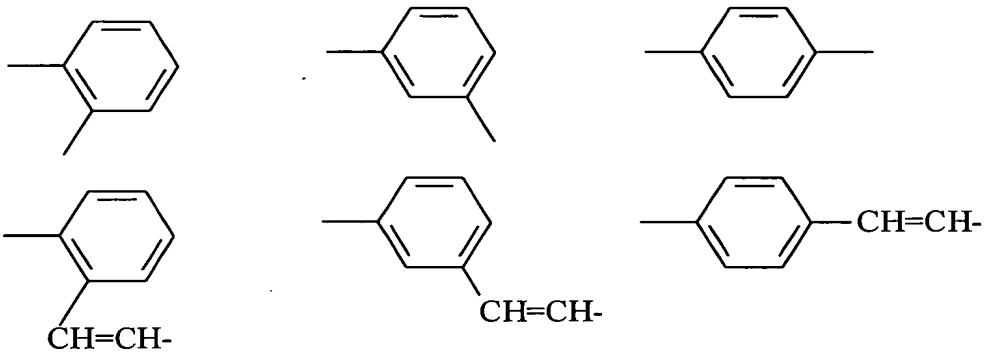


wherein

R_1, R_2, and R_3 are each independently a hydrogen atom, an alkyl group having 1 to 5 carbons, or an alkoxy group having 1 to 5 carbons;

R_4 is a hydrogen atom, a hydroxymethyl group, an alkyl group, or a carboxyl group which is optionally esterified or amidated;

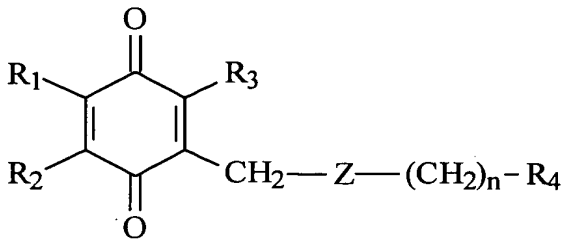
Z is



and, n is an integer from 0 to 6,

or its hydroquinone form, or a pharmaceutically acceptable salt thereof.

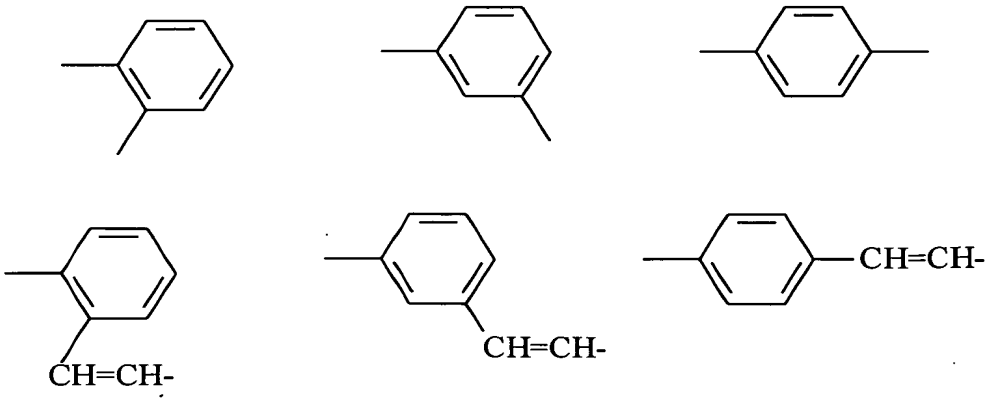
Claim 40 (Previously Presented) A method for inhibiting TNF-α production comprising administering to a patient in need of TNF-α inhibition a benzoquinone derivative represented by the following general formula (1):



wherein R_1, R_2 and R_3 are each independently a hydrogen atom, an alkyl group having 1 to 5 carbons, or an alkoxy group having 1 to 5 carbons;

R_4 is a hydrogen atom, a hydroxymethyl group, an alkyl group, or a carboxyl group which is optionally esterified or amidated;

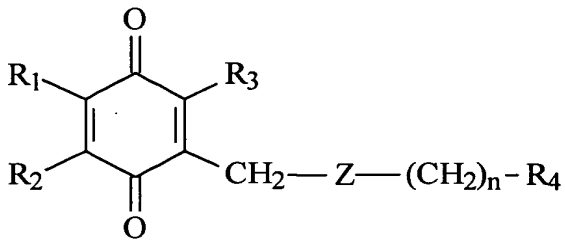
Z is



and, n is an integer from 0 to 6,

or its hydroquinone form, or a pharmaceutically acceptable salt thereof.

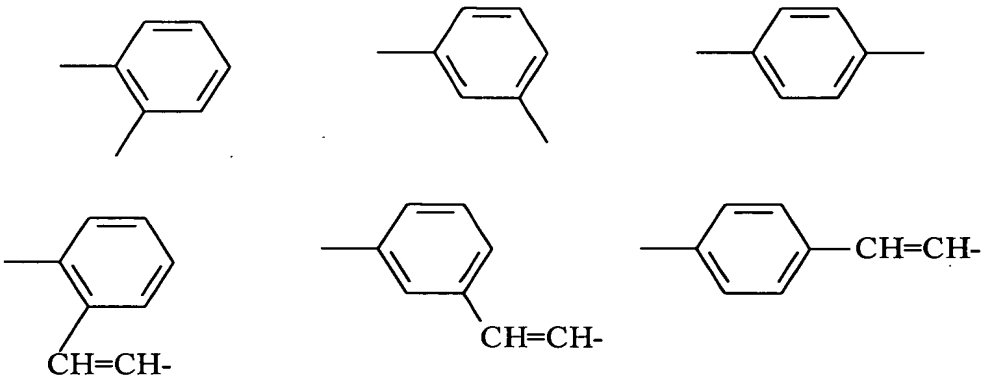
Claim 41 (Previously Presented) A method for preventing or treating diseases caused by the excessive production of TNF-α comprising administering to a patient a benzoquinone derivative represented by the following general formula (1):



wherein R_1, R_2 and R_3 are each independently a hydrogen atom, an alkyl group having 1 to 5 carbons, or an alkoxy group having 1 to 5 carbons;

R_4 is a hydrogen atom, a hydroxymethyl group, an alkyl group, or a carboxyl group which is optionally esterified or amidated;

Z is

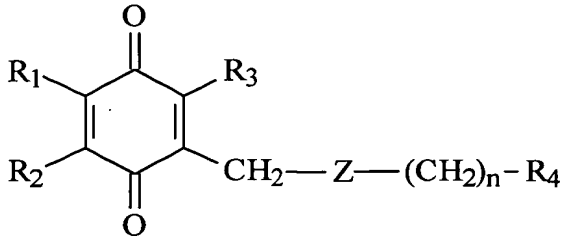


and, n is an integer from 0 to 6,

or its hydroquinone form, or a pharmaceutically acceptable salt thereof.

41 Claims 42-43 (Cancelled)

Claim 44 (Previously Presented) A method for treatment of inflammatory diseases comprising administering to a patient in need of such treatment an effective amount of a benzoquinone derivative represented by the following general formula (I):

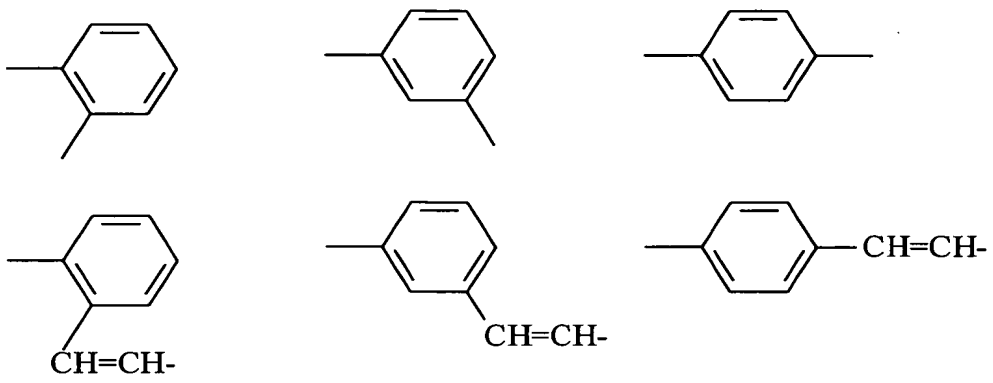


wherein

R_1, R_2 and R_3 are each independently a hydrogen atom, an alkyl group having 1 to 5 carbons, or an alkoxy group having 1 to 5 carbons;

R_4 is a hydrogen atom, a hydroxymethyl group, an alkyl group, or a carboxyl group which is optionally esterified or amidated;

Z is

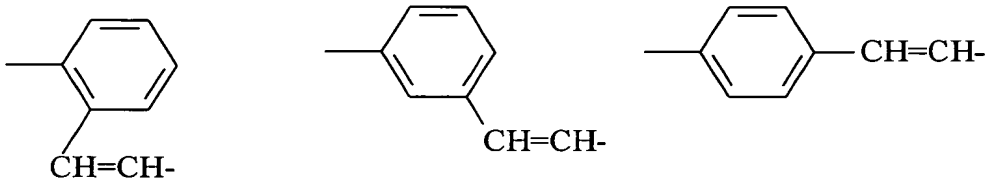


and, n is an integer from 0 to 6, or its hydroquinone form, or a pharmaceutically acceptable salt thereof.

Claim 45 (Previously Presented) The method according to claim 44 wherein R_1 and R_2 are a hydrogen atom, a methyl group, or a methoxy group.

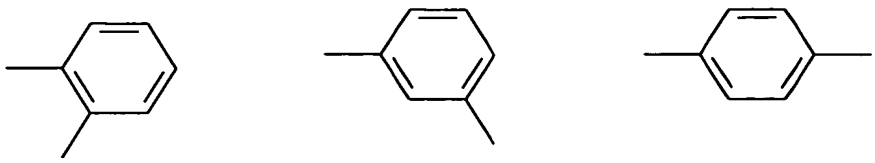
Claim 46 (Previously Presented) The method according to claim 44 wherein R_3 is a hydrogen atom or a methyl group.

Claim 47 (Previously Presented) The method according to claim 44 wherein Z is



and n is an integer 0.

Claim 48 (Previously Presented) The method according to claim 44 wherein Z is



and n is an integer 1, 2, or 3.

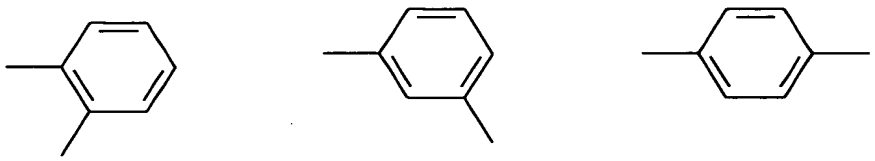
Claim 49 (Previously Presented) The method according to claim 44 wherein R_4 is a group $-COOR_5$ wherein R_5 is a hydrogen atom, an optionally substituted alkyl group having 1 to 8 carbons, an optionally substituted phenyl group, or an optionally substituted aralkyl group having 7 to 11 carbons.

Claim 50 (Previously Presented) The method according to claim 44 wherein R_4 is a group $-CONR_6R_7$ wherein R_6 and R_7 are each independently a hydrogen atom, an optionally substituted alkyl group having 1 to 8 carbons, an optionally substituted bicyclic unsaturated or partially saturated hydrocarbon ring group having 9 to 11 carbons, an optionally substituted heterocyclic group, an optionally substituted phenyl group, an optionally substituted aralkyl group having 7 to 11 carbons, or a heteroaryl-C_1-C_3-alkyl group, or R_6 and R_7, together with the nitrogen atom to which they are attached, represent a heterocyclic group which may further contain a nitrogen, oxygen, and/or sulfur atom.

Claim 51 (Previously Presented) The method according to claim 44 wherein R_4 is a group $-CONR_6R_7$ wherein R_6 and R_7, together with the nitrogen atom to which they are attached, represent a 5- to 10-membered optionally substituted, nitrogen-containing

heterocyclic group which may contain, in addition to the carbon and nitrogen atom, 1 to 3 heteroatoms selected from the group consisting of a nitrogen, oxygen and sulfur atom, the carbon atom on said cyclic group being optionally a ketone form or the sulfur atom on said cyclic group being optionally an oxide form.

Claim 52 (Previously Presented) The method according to claim 44 wherein R_1 and R_2 are a methyl group or a methoxy group; R_3 is a methyl group: R_4 is a carboxyl group which is optionally esterified or amidated; Z is

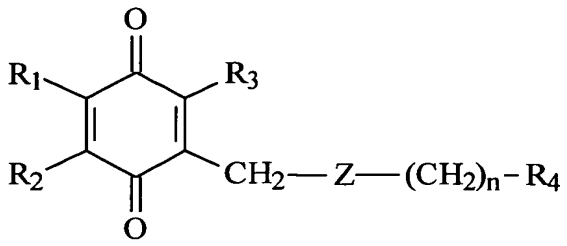


and n is an integer 1, 2, or 3.

Claim 53 (Currently Amended) The method according to claim 44 wherein the benzoquinone derivative suppresses gene expression of one or more substances ~~is~~ selected from the group consisting of IL-1, TNF-α, IL-2, IL-6, IL-8, iNOS, granulocyte colony-stimulating factor, inteferon-β, ICAM-1, VCAM-1, ELAM-1, major histocompatibility system class I, major histocompatibility system class II, β2-microglobulin, immunoglobulin light chain, serum amyloid A, angiotensinogen, complement B, complement C4, c-myc, HIV, HTLV-1, SV40, CMV, and adenovirus.

A1

Claim 54 (Previously Presented) A method for treatment of autoimmune diseases comprising administering to a patient in need of such treatment an effective amount of a benzoquinone derivative represented by the following general formula (I):

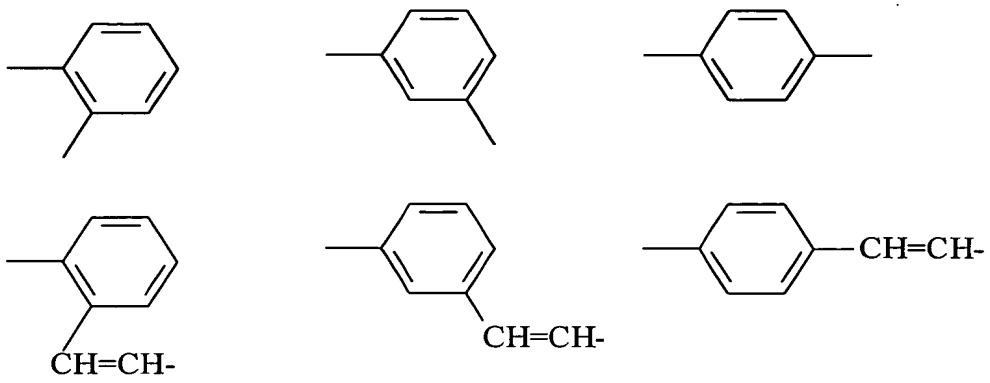


wherein

R_1, R_2 and R_3 are each independently a hydrogen atom, an alkyl group having 1 to 5 carbons, or an alkoxy group having 1 to 5 carbons;

R_4 is a hydrogen atom, a hydroxymethyl group, an alkyl group, or a carboxyl group which is optionally esterified or amidated;

Z is

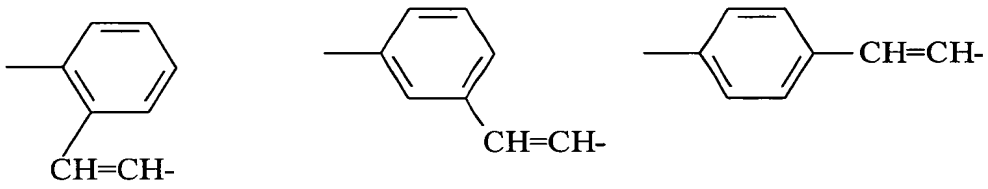


and, n is an integer from 0 to 6, or its hydroquinone form, or a pharmaceutically acceptable salt thereof.

Claim 55 (Previously Presented) The method according to claim 54 wherein R_1 and R_2 are a hydrogen atom, a methyl group, or a methoxy group.

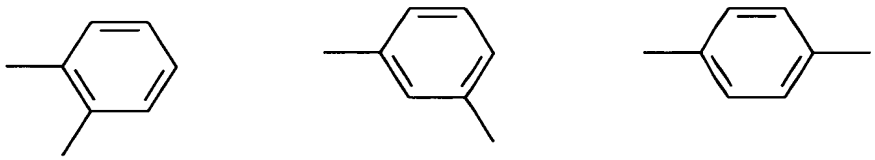
Claim 56 (Previously Presented) The method according to claim 54 wherein R_3 is a hydrogen atom or a methyl group.

Claim 57 (Previously Presented) The method according to claim 54 wherein Z is



and n is an integer 0.

Claim 58 (Previously Presented) The method according to claim 54 wherein Z is



and n is an integer 1, 2, or 3.

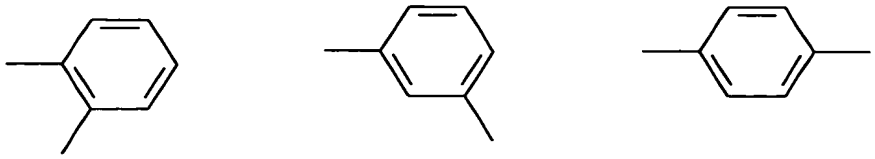
Claim 59 (Previously Presented) The method according to claim 54 wherein R_4 is a group $-COOR_5$ wherein R_5 is a hydrogen atom, an optionally substituted alkyl group

having 1 to 8 carbons, an optionally substituted phenyl group, or an optionally substituted aralkyl group having 7 to 11 carbons.

Claim 60 (Previously Presented) The method according to claim 54 wherein R_4 is a group -$CONR_6R_7$ wherein R_6 and R_7 are each independently a hydrogen atom, an optionally substituted alkyl group having 1 to 8 carbons, an optionally substituted bicyclic unsaturated or partially saturated hydrocarbon ring group having 9 to 11 carbons, an optionally substituted heterocyclic group, an optionally substituted phenyl group, an optionally substituted aralkyl group having 7 to 11 carbons, or a heteroaryl-C_1-C_3-alkyl group, or R_6 and R_7, together with the nitrogen atom to which they are attached, represent a heterocyclic group which may further contain a nitrogen, oxygen, and/or sulfur atom.

Claim 61 (Previously Presented) The method according to claim 54 wherein R_4 is a group -$CONR_6R_7$ wherein R_6 and R_7, together with the nitrogen atom to which they are attached, represent a 5- to 10-membered optionally substituted, nitrogen-containing heterocyclic group which may contain, in addition to the carbon and nitrogen atom, 1 to 3 heteroatoms selected from the group consisting of a nitrogen, oxygen and sulfur atom, the carbon atom on said cyclic group being optionally a ketone form or the sulfur atom on said cyclic group being optionally an oxide form.

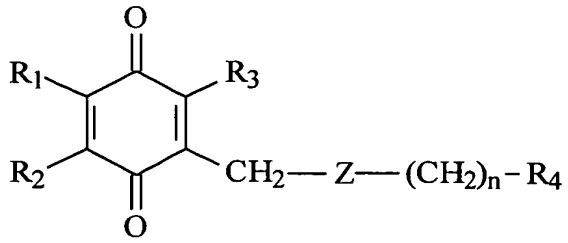
Claim 62 (Previously Presented) The method according to claim 54 wherein R_1 and R_2 are a methyl group or a methoxy group; R_3 is a methyl group: R_4 is a carboxyl group which is optionally esterified or amidated; Z is



and n is an integer 1, 2, or 3.

Claim 63 (Currently Amended) The method according to claim 54 wherein the benzoquinone derivative suppresses gene expression of one or more substances ~~is~~ selected from the group consisting of IL-1, TNF-α, IL-2, IL-6, IL-8, iNOS, granulocyte colony-stimulating factor, inteferon-β, ICAM-1, VCAM-1, ELAM-1, major histocompatibility system class I, major histocompatibility system class II, β2-microglobulin, immunoglobulin light chain, serum amyloid A, angiotensinogen, complement B, complement C4, c-myc, HIV, HTLV-1, SV40, CMV, and adenovirus.

Claims 64 (Previously Presented) A method for treatment of viral diseases comprising administering to a patient in need of such treatment an effective amount of a benzoquinone derivative represented by the following general formula (I):

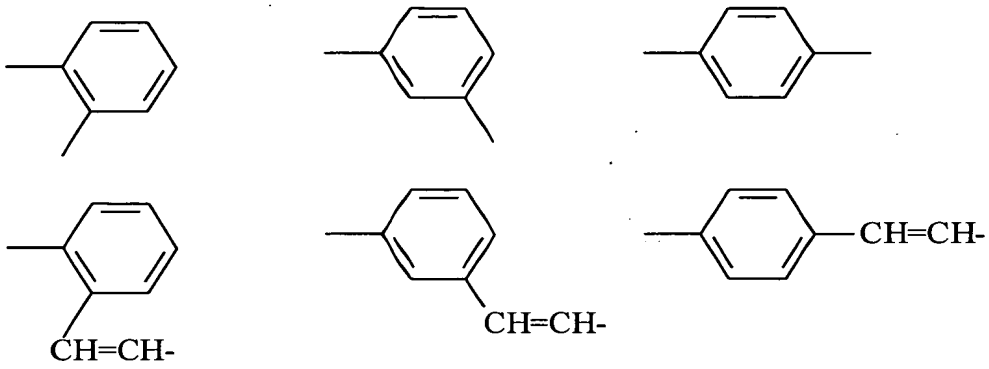


wherein

R_1, R_2 and R_3 are each independently a hydrogen atom, an alkyl group having 1 to 5 carbons, or an alkoxy group having 1 to 5 carbons;

R_4 is a hydrogen atom, a hydroxymethyl group, an alkyl group, or a carboxyl group which is optionally esterified or amidated;

Z is

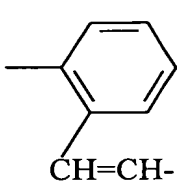
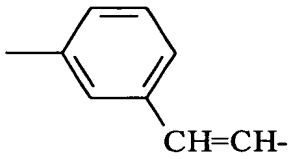
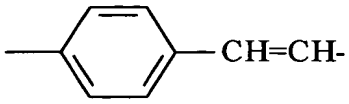


and, n is an integer from 0 to 6, or its hydroquinone form, or a pharmaceutically acceptable salt thereof.

Claim 65 (Previously Presented) The method according to claim 64 wherein R_1 and R_2 are a hydrogen atom, a methyl group, or a methoxy group.

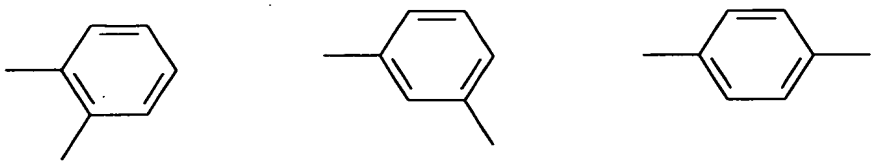
Claim 66 (Previously Presented) The method according to claim 64 wherein R_3 is a hydrogen atom or a methyl group.

Claim 67 (Previously Presented) The method according to claim 64 wherein Z is

and n is an integer 0.

Claim 68 (Previously Presented) The method according to claim 64 wherein Z is



and n is an integer 1, 2, or 3.

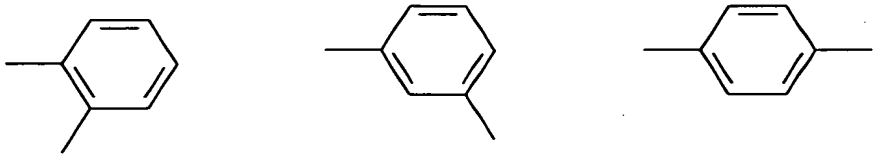
Claim 69 (Previously Presented) The method according to claim 64 wherein R_4 is a group $-COOR_5$ wherein R_5 is a hydrogen atom, an optionally substituted alkyl group having 1 to 8 carbons, an optionally substituted phenyl group, or an optionally substituted aralkyl group having 7 to 11 carbons.

Claim 70 (Previously Presented) The method according to claim 64 wherein R_4 is a group $-CONR_6R_7$ wherein R_6 and R_7 are each independently a hydrogen atom, an optionally substituted alkyl group having 1 to 8 carbons, an optionally substituted bicyclic unsaturated or partially saturated hydrocarbon ring group having 9 to 11 carbons, an optionally substituted heterocyclic group, an optionally substituted phenyl group, an optionally substituted aralkyl group having 7 to 11 carbons, or a heteroaryl-C_1-C_3-alkyl

group, or R_6 and R_7, together with the nitrogen atom to which they are attached, represent a heterocyclic group which may further contain a nitrogen, oxygen, and/or sulfur atom.

Claim 71 (Previously Presented) The method according to claim 64 wherein R_4 is a group $-CONR_6R_7$ wherein R_6 and R_7, together with the nitrogen atom to which they are attached, represent a 5- to 10-membered optionally substituted, nitrogen-containing heterocyclic group which may contain, in addition to the carbon and nitrogen atom, 1 to 3 heteroatoms selected from the group consisting of a nitrogen, oxygen and sulfur atom, the carbon atom on said cyclic group being optionally a ketone form or the sulfur atom on said cyclic group being optionally an oxide form.

Claim 72 (Previously Presented) The method according to claim 64 wherein R_1 and R_2 are a methyl group or a methoxy group; R_3 is a methyl group: R_4 is a carboxyl group which is optionally esterified or amidated; Z is



and n is an integer 1, 2, or 3.

Claim 73 (Currently Amended) The method according to claim 64 wherein the benzoquinone derivative suppresses gene expression of one or more substances ~~is~~ selected from the group consisting of IL-1, TNF-α, IL-2, IL-6, IL-8, iNOS, granulocyte colony-stimulating factor, inteferon-β, ICAM-1, VCAM-1, ELAM-1, major histocompatibility

#1 system class I, major histocompatibility system class II, β2-microglobulin, immunoglobulin light chain, serum amyloid A, angiotensinogen, complement B, complement C4, c-myc, HIV, HTLV-1, SV40, CMV, and adenovirus.